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5 August 1982

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

(FOUO 8/82)

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SUB-SAHARAN AFRICA

NIGER

AEC'S 10-YEAR NUCLEAR POWER DEVELOPMENT PLAN

OW031145 Tokyo ASAHI EVENING NEWS in English 2 Jul 82 p 3

[Text] Japan's Atomic Energy Commission [AEC] has decided on a 10-year nuclear power development program aimed at developing fast breeder reactors for practical use around 2010. The AEC, headed by Ichiro Nakagawa, cabinet minister and chief of the Science and Technology Agency, has compiled the sixth long-term project after reviewing the present plan worked out in 1978. Officials said Wednesday the new program was mapped out in view of inflated expactations for stabilized supply of nuclear power.

The new long-term plan, budgeted at 5,400 billion yen (at 1982 prices), estimates nuclear power is fiscal 1990 at 46 million kilowatt-hours (KWH), rising to 90 million KWH in fiscal 2000. It recommends that the next-generation fast breeder reactor be brought into commercial operation by around 2010, and that 3,000 SWU (Separative Work Unit) tons of enriched uranium be produced domestically annually by around the year 2000. The AEC also proposed full utilization of plutonium through the advanced thermal converter reactor and the light-water reactor by 1990.

It looked forward to private industry's positive collaboration in building and running these plants, and suggested that the time has come for Japan to consider exporting nuclear power technology and related equipment. With these prospects in mind, the AEC emphasized the need for the nation to promote a nuclear nonproliferation policy.

CSO: 5100/2213

PEOPLE'S REPUBLIC OF CHINA

ENTHUSIASM FOR NUCLEAR PLANTS REPORTEDLY COOLED

HK040937 Hong Kong FAR EASTERN ECONOMIC REVIEW in English 4-10 Jun 82 pp 12, 13

[Article by Nayan Chanda, Hong Kong]

[Excerpt] According to unconfirmed reports, French Foreign Minister Claude Cheysson is scheduled to visit China in July. But Jobert's comment, if it is truly reflective of the French Government's policy, would tend to cast doubt on such a visit. However, since Jobert's unhappy trip to China last year there have been exchanges of military delegations. Last month China signed an agreement with a French company to buy FR 275 million (US$45 million) worth of coal mining equipment--the most important deal since the summer of 1980. But Jobert said that nothing has come out of the Chinese agreement in principle--announced by former President Valery Giscard d'Estaing in October 1980 during his visit to China--to buy two nuclear power stations worth Fr8 billion.

China's enthusiasm for nuclear plants has apparently been cooled by lack of money. The most likely one to go ahead is Guangdong Province, which would sell power to Hong Kong's China Light and Power. Sources in Hong Kong suggest France's Framatome, which manufactures a pressurised water reactor under a licence from Westinghouse of the United States, is the front runner for the nuclear engineering part of the Guangdong-Hong Kong project. However, there is still some way to go before this is finalized, so France is anxious to find alternative markets if the Guangdong deal does not work out.

The French business community has shown disenchantment at the low level of business with China despite good bilateral relations since 1964. French exports to China rose by only 15 percent last year from 1980, while exports to Taiwan shot up by 68.8 percent. France has a favorable trade balance with Taiwan while the opposite is the case with China.

Jobert reflected some of this frustration when asked about the development of French trade with Taiwan. Since French policy for many years has been to have good political ties with China, Paris has taken care to do nothing to hurt China's feelings in its dealing with Taiwan, in fact "a little too much" in Jobert's view. He said that if China did not buy the nuclear power stations from France the latter could "sell them elsewhere," implying Taiwan. Informed sources told the REVIEW that Taiwan has shown great interest in buying French-built nuclear power stations if France were to grant, among other things,

landing rights in Paris for Taiwan's flag-carrier China Airlines. Asked if France had considered the possibility of selling arms to Taiwan, Jobert at first said: "We do not have a precise policy." But later he corrected himself saying: "We are not especially concerned with this prospect."

CSO: 5100/2197

BRIEFS

MADERO WANTS TO FULFILL PROGRAM--Buenos Aires, 7 Jul (DYN)--It has been officially reported that Vice Adm Carlos Castro Madero, president of the National Atomic Energy Commission (CNEA), today proposed to President Reynaldo Bignone the adoption of some economic measures for continuing the national nuclear plan without any problems. Today Castro Madero talked with Bignone for more than 30 minutes at Government House, explaining to the chief of state the problems confronting the CNEA in fulfilling the current nuclear plan because of the difficult official budget situation. The projects under construction which may be delayed due to shortage of funds are the nuclear plants of Embalse Rio Tercero in Cordoba, Atucha II in Buenos Aires and the Arroyito heavy water plant in Neuquen Province, a plant which is vital for Argentina to complete the nuclear fuel preparation cycle. [Excerpt] [PY081237 Buenos Aires DYN in Spanish 1419 GMT 7 Jul 82]

REMARKS ON NUCLEAR SUBS SCORED--Buenos Aires, 5 Jul (DYN)--Referring to the possibility that the National Atomic Energy Commission [CNEA] could build a nuclear submarine, former CNEA technological manager Jorge Sabato stated that it would be "the most outrageous shamelessness" of the military to "decide for themselves and by themselves the investment of more money in armaments." Sabato made these remarks to DYN, referring to remarks made by CNEA Chairman Carlos Castro Madero, who does not discard the possibility that Argentina could build a nuclear-powered submarine in the near future, since we have the technical elements to begin the task. Sabato said he had "no objection to the accomplishment of feasibility studies for the construction of a nuclear-powered submarine and that it be done by the CNEA, which has great technical competence," but added that "the final decision must be adopted by a constitutional government." He also expressed his "profound concern over the subject itself, because it would seem that Argentina is withdrawing from its traditional line in matters of nuclear energy, which so far has been used exclusively for peaceful purposes. A nuclear submarine could be the first step toward the development of nuclear weapons," he stated. As a "final thought" Sabato stated that "the country has much more important priorities than nuclear submarines." He cited among other things education and housing, and added that there are "other priorities in the very field of nuclear energy." [Text] [PY080015 Buenos Aires DYN in Spanish 1135 GMT 5 Jul 82]

CSO: 5100/2214

CHRONOLOGY OF DEVELOPMENTS IN IRAQI NUCLEAR INDUSTRY

Duesseldorf JAHRBUCH DER AUTOMWIRTSCHAFT in German Jan 1982 Vol 13, pp 174-176

[Text] 4 April: IAEO inspections in Iran, Iraq and Pakistan

According to a report of the president of the International Atomic Energy Organization to the IAEO governors council, the IAEO carried out routine inspections in the Iraqi nuclear research center in 1981 as well as in Iran and in Pakistan in October 1980, in each of which "satisfactory proofs" of the entire amount of nuclear material were given.

Israeli Air Attack at Osirak

On Sunday, 7 June 1981, Israeli fighter jets (eight F-16's from the USA with six F-15's as fighter cover) bombed the Osirak research reactor of the Iraqi nuclear research center in Tamuz near Tawaitha, approximately 20 km Southwest of Baghdad, which had been built by the French and was ready to be used. The reactor was heavily damaged, perhaps completely destroyed. Since the core had not been charged yet, no radioactivity escaped.

The planes, which obviously flew along the Jordanian-Saudi Arabian border, were neither detected by Iraq nor by the Saudi Arabia-stationed AWACS plane which patrols the Persian Gulf, and returned without any losses. Jordanian stations that detected the formation were misled by Arabic radio traffic.

Lasting news accounts stating the attack had been on a nuclear power plant are false. There are no nuclear power plants in Iraq, neither in use nor in the process of being built or planned. According to information from the IAEO, all reactor sites in Iraq are located in the research center at Tamuz. Here there are 1) the small research reactor IRT 2000, a swimming-pool type reactor which was delivered by the Soviet Union and has been in use since 1967, working with uranium that has been enriched to 10 percent, 36 percent and 80 percent respectively; 2) the nearly completed large Osirak research reactor called Tamuz-1, a tank-swimming pool reactor under construction by the French since 1977 and which, according to IAEO, has a capacity of 40 MWth and should start working this year, and, belonging to Tamuz-1, a critical set-up, Tamuz-2, with a 500 kWth capacity. Both plants should be fed uranium that has been enriched with U235 to 93 percent. In addition to this, there are the respective fuel depots in Tamuz as well as a laboratory with hot cells, delivered by the Italians.

Osirak resembles the Osiris reactor which is being operated in the French nuclear research center at Saclay with a capacity of 70 MWth. According to the present information, the building at Osirak and the inner walling were heavily damaged; however, no damages were reported from Tamuz-2 nor from the depot of irradiated nuclear fuel.

After the announcement of the action which came only after a report on Jordanian radio on 8 June 1981, the action was justified by the Israeli prime minister M. Begin by saying that Iraq intended to produce atomic bombs with the help of the Osirak facility which would be a life-threatening menace for Israel. This statement was instantly rejected. The IAEO pointed out that Iraq had signed the non-proliferation treaty in 1970 and had accepted supervision of all its nuclear-technical work by the IAEO (both of which are not the case for Israel. The supervision was carried out satisfactorily with the last inspection having taken place in January 1981. In spite of using fuel elements containing highly enriched uranium, which actually is appropriate for the production of nuclear weapons, a swimming-pool reactor would be of little use in the production of nuclear material, since the visual supervision of the nucleus of the reactor is very easy. Besides that, the plutonium could hardly be concealed because in the fuel elements, only very small amounts of plutonium are produced and a mantle of breeding elements would be instantly detectable. In addition, the presence of many technicians of the delivering country would provide additional safety against any misuse of the fissionable material. France points out that Osirak is supposed to have 10 annual working periods of 20 days each, during which the minimum amount of Pu necessary for a bomb could not be produced. France has also irradiated the first fuel elements before delivery, which would definitely make misuse of the elements much more problematic.

While according to IAEO information, during the inspection the fuel for the Tamuz reactors had been found, the French point out that the fuel elements that had originally been delivered for the critical set-up had been returned to France after the first air attack on the research center which was flown on 30 September 1980 by unidentified aircraft, not causing any major damage, and that the delivery of the elements for Tamuz-1 which was planned for this fall, had not been completed yet.

The Israeli action has been unanimously condemned worldwide. The Security Council of the UN passed an appropriate resolution which, however, does not contain any sanctions against Israel. U.S. President R. Reagan ordered an export ban on four fighter jets that stood ready for delivery to Israel. IAEO chief secretary S. Eklund called the Israeli action an attack on the control system of the IAEO. However, the IAEO does not have the power to take any steps in case of detection of any violations of its safety controls. On 12 June 1981 the IAEO governors council passed a resulution which calls on the IAEO general-conference of next September to consider all the consequences of the action, including a temporary suspension of Israel's rights as an IAEO member and to help Iraq overcome the effects of the attack (of the 34 members of the governors council, Canada and the United States voted against the resolution and Australia, Sweden and Switzerland abstained).

In France as well as from the Israeli opposition, the action of Begin is being criticized even under consideration of the fact that Israel feels threatened, mainly because not all diplomatic possibilities for measures against this threat had been taken. Especially since the election of F. Mitterrand as president, who holds a critical view of the delivery of the Osirak facility, French measures are to be taken into consideration. This includes the question of delivery of fuel elements with low enrichment. Such elements had already been developed under consideration of the Non-Proliferation treaty by the French CEA under the name CARAMEL with less than 10 percent enrichment and had been tested in Osiris. However, they had been rejected by Iraq under reference to the specifications of the treaty and their still-lacking experience and certain difficulties with the use of the elements.

The worldwide response is even intensified by the fact that this is the first military attack on a nuclear facility in the world. The consideration of the safety aspects of such plants took for granted that, since every country has such plants, and therefore, must expect an appropriate counterattack, such actions could be considered as highly improbable. However, when Begin gave the reasons for the date of the (obviously long-planned but delayed) attack, he especially pointed out that the attack had to be carried out before the plant started working so that no radioactivity could leak out.

1 August: Osirak still unavailable

On 18 June 1981, earlier than expected, the IAEO sent supervisors to the Iraqi nuclear research center at Tamuz where the research reactor Tamuz-1 (Osirak) had been heavily damaged during the Israeli air attack on 7 June 1981, also during which the French engineer D. Chaussepied from the firm Air Liquide lost his life. Since the supervisors were not able to follow the conditions of the Iraqi authorities who demanded that a bond be signed which freed the Iraqi Government of any responsibilities for the personal safety of the supervisors, they were not able, "due to suspicion of unexploded bombs and the extent of the damage, to get close to the damaged site and to inspect the fuel of the Tamuz reactors," as IAEO president S. Eklund explained on 6 July 1981 before the IAEO governors council. However, the supervisors inspected the reactor IRT 2000 which had not been damaged and the depot of natural and enriched uranium, where no changes since the last inspection could be notice. On 2 July 1981, the IAEO president laid off the U.S. IAEO supervisor, R. Richters, without notice on the grounds of serious violations in connection with the security of secret information that had been obtained by the member countries. Richters, who belonged to the IAEO since February 1978 and who had been appointed to the section South and Southeast since 16 March 1979, but had not been employed in Iraq itself, offered his resignation to the IAEO from the United States on 18 June 1981, effective from 16 June 1981. On 19 June 1981 he appeared before a committee of the American Congress and criticized the effectiveness of the IAEO control-function, especially with respect to Osirak. Already earlier he had written a secret document about the safety controls available to the U.S. embassy in Vienna.

Saudi Arabia announced it was ready to finance the re-establishment of the research center and confirmed officially that King Kahled had told the French

president F. Mitterrand had pointed out that France was basically willing to provide a new reactor, but only if all guarantees against misuse for military purposes were kept. Here the question of delivery of low-enriched fuel will probably also be of importance. In France it is emphasized that all these questions will be considered only after Iraq has made the appropriate request, which it has not yet done.

1 October: Osirak is to be rebuilt

As announced after talks with the deputy prime minister of Iraq, T. Aziz, in mid-August in Paris with President F. Mitterrand and several ministers, France is willing to organize the reconstruction of the research reactor Tamuz-1 (Osirak) of the Iraqi research center which had been destroyed during the Israeli air attack of 7 June 1981.

However, France demands more far-reaching guarantees for the exclusively peaceful use of the plant than had been incorporated into the original contract. Negotiations about details will supposedly be taken up in the near future. The use of low-enriched fuel and an even stronger engagement of the IAEO control function is taken into consideration as well as the presence of French specialists in the Iraqi center for a longer period of time than the planned 10 years. Saudi Arabia has declared its willingness to finance the reconstruction.

4 December: IAEO supervisors inspect Tuwaitha

As the IAEO announced, two of its supervisors carried out safety inspections from 15-17 November 1981 in the Iraqi nuclear research center at Tuwaitha near Baghdad after the Iraqi Government had announced on 9 January 1981 that the buildings of the Tamuz reactors could be visited again after disposal of bombs and partially damaged sources of radiation. According to the report, no signs of any violation against the safety control treaty between Iraq and the IAEO were found. The material was in agreement with earlier inspections on 28 and 29 June 1980 and on 18 and 19 January 1981 (after the first air attack on 30 September 1980). Of the 39 highly enriched fuel elements, one was located in the hall of the reactor, the other 38 were irradiating in the base of the small Tamuz-2 reactor which had not been damaged during the air attack on 7 June 1981. The directly adjacent building of the big research reactor Tamuz-1 (Osirak), however, is heavily damaged. Also the research reactor IRT 2000 and the depot for natural and enriched uranium were unchanged. The supervisors were also asked by the Iraqi authorities to examine the supplies of Yellow Cake, the delivery of which had been pointed out to the IAEO by Iraq and the delivering countries. They will be put under IAEO control before being used, e.g. chemically cleaned.

2 March: Fuel cycle. Portuguese uranium delivery to Iraq

In 1980 approximately 100 t U_3O_8 with a value of about DM 20 million (approximately $8 million) were delivered from Portugal to Iraq. The delivered amount

corresponds approximately to one year's production. In 1984 however, a new uranium factory will be started in Alto Alentejo which will increase the annual production to 270 t U_3O_8. The delivery of uranium was compensation for the delivery of oil from Iraq which covers 40 percent of the Portugese demand.

3 May: International treaties

Belgium-Iraqi nuclear treaty.

On the occasion of a visit of the Belgian secretary for foreign trade in Baghdad, a treaty between Belgium and Iraq was signed concerning cooperation in the field of nuclear energy. It runs for one year and can be renewed. One of the projects is the production of uranium from the phosphates of Al-Kaim.

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CSO: 8120/1422

NATION SAID TO BE FIFTH WORLD PRODUCER OF URANIUM

Paris JEUNE AFRIQUE in French No 1115, 19 May 82 pp 47,50

[Article by Mamadou Alpha Barry: "In the Beginning There Was Uranium"

[Text] Paris' attention to Niger is not disinterested. Niger, indeed, is the fifth ranking world producer of a strategic product: uranium. Although as far as overall trade is concerned Niger ranks only 46th as a world supplier of France and 10th of Africa and ranks 63rd as France's customer and 13th as Africa's, it is the no 1 foreign supplier of uranium (coming before Gabon and Canada)--more specifically, in marketable concentrates of about 70 percent uranium.

Purchases of this ore by the French COGEMA [General Company of Nuclear Materials] rose from 930 tons in 1977 to 1,690 tons in 1981. To this must be added, also for 1981, the purchase of 600 tons by the CEA [Atomic Energy Commission], or a total of 7,000 tons for the period under consideration. This represents a total of 172 billion CFA francs. Niger supplies an equivalent of more than 30 percent of French needs in this ore.

It is to be noted that since 1979, Franco-Nigerien trade has evolved in favor of Niger, primarily because of French purchases of uranium. Niger, along with Gabon, is the only country in the franc zone whose trade balance with France shows a surplus. In 1981, the small increase in the value of Nigerien exports to France reflected the drop in the price of uranium. The discovery in 1966 of mineable uranium-bearing deposits at the foot of Air Mountain near the city of Arlit, 950 kilometers northeast of Niamey, was a veritable godsend for Niger. Vast but sparsely populated (four inhabitants per square kilometer), ravaged by drought and, to top it off, located in the heart of the continent, more than 1,000 kilometers from any outlet to the sea, this country is laying all its hopes on uranium.

SOMAIR [Air Region Mining Company], with capital amounting to 4.3 billion CFA francs, was formed in 1968. France, through COGEMA, claimed the majority of its shares. When the mine became operational in 1971, Niger received a pitiful 1 billion CFA francs as a dividend. Once in power in April 1974, the CMS [Supreme Military Council] tried to break France's monopoly. The new government obtained a substantial increase in its share, rising from 17 to 33 percent. It also subscribed to 31 percent of the capital (3.5 billion CFA francs) of

SOMINAK [Akouta Mining Company] which, in 1978, began mining a deposit located 10 kilometers from that of Arlit. In 1976, the military regime also set up ONAREM [National Office of Mineral Resources], which took over the state's interests in both companies.

Uranium production increased rapidly: from 410 tons in 1971, it rose to 2,249 tons in 1978 once SOMINAK became operational. The following year, Niger went up to fifth ranking in the world with production of 3,500 tons, coming after the United States, Canada, South Africa and Namibia but ahead of France. (It is to be noted that this ranking does not include the USSR, East Europe or China, where production levels are unknown.) It is estimated that Niger will supply 4,860 tons of uranium in 1982.

A precious ore, therefore, that has become the primary foreign currency resource of the country. Besides its share dividends and the sale of stock alloted to ONAREM, the state draws royalties from production, customs duties on exports and a tax on profits. Result: revenues derived from uranium represent 30 to 40 percent of the Nigerien budget, fixed at 93.3 billion CFA francs for 1982. This result is largely due to the rapid rise in the price of uranium following the energy crisis of 1973: 5,000 CFA francs a kilogram in 1971, 14,000 CFA francs in 1976 and 24,500 CFA francs in 1980. Eighty percent of export revenues comes from the sale of this product. However, the petroleum crisis had positive effects not only on uranium. The drop in economic activity in the industrialized countries and ecological demonstrations against all nuclear plants resulted in a revision of electro-nuclear programs. This resulted in a sharp drop in the world price of this strategic ore, which fell to 16,500 CFA francs a kilogram in 1981. It was only after negotiations between Nigerien and French officials and representatives of other partners that Niger obtained preferential rates: 20,000 CFA francs a kilogram in 1981 and 24,000 CFA francs in 1982. Nevertheless, it is to be noted that these prices remain lower than the prices 2 years ago. As a result, there was a cut of 8 billion CFA francs from the 1981 budget and a 9 billion shortage to be made up compared with revenue estimates for 1982. On the other hand, the record of SMTT [Tassa-N'Taghalgue Mining Company] for the mining of a third uranium deposit in the vicinity of Arlit could benefit through more preferential treatment by the French Government. This company was formed in 1979. Its capital of 10.5 billion CFA francs is divided three ways, i.e., among ONAREM, COGEMA and a Kuweiti firm.

With proven reserves of 160,000 tons, Niger could, by 1990, be the no 1 African producer and the fourth world producer, with 8,000 to 11,000 tons of uranium concentrates. However, given the uncertainty over prices, it is at the very least risky to project that Niger could derive sufficient revenue from uranium to bring about a genuine economic take-off.

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